

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today  
(1) was not written for publication in a law journal and  
(2) is not binding precedent of the Board.

Paper No. 9

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte ROBERT A. GROSS

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Appeal No. 96-1380  
Application 08/219,189<sup>1</sup>

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ON BRIEF

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Before KRASS, MARTIN and TORCZON, Administrative Patent  
Judges.

MARTIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the  
examiner's rejection of claims 1-34, all of the pending  
claims, under  
35 U.S.C. § 103. We reverse.

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<sup>1</sup> Application for patent filed March 28, 1994.

The invention relates to the removal of residual toner and debris from a transfer member, such as a biased transfer roll, an intermediate transfer belt, or an electrostatic transfer belt, in an electrostatic printing apparatus (Spec. at 1, 1st para.). Appellant's specification states that in prior art electrostatic printing apparatuses, the residual material is collected from these transfer members by a cleaning system that is separate from the cleaning station that is used to clean the photoconductive member (Spec. at 3, line 31 to p. 4, line 5). In accordance with appellant's invention, the residual material on the transfer member is collected and transferred to the photoconductive member for removal by its cleaning station (Spec. at 8, lines 22-30).

Figures 1 and 2A-2C show the invention applied to an electrostatic printing apparatus that employs a bias transfer roll (BTR) 18 in a transfer station A. Switch 38 is responsive to controller 68 to connect the conductive core 44 of BTR 18 to either the positive biasing source 46 or the negative biasing source 48, thereby causing BTR 18 to attract or repel the negatively charged toner particles. The controller also controls the position of the wiper blade 28 so

to be either engaged with the BTR surface or disengaged therefrom. The operation of this embodiment is depicted in Figures 2A-2C, described in the specification at page 9, line 5 to p. 11, line 9.

Referring to Figure 2A, when the printing apparatus is in the "transfer state," blade 28 engages the BTR surface and the switch 38 connects the positive bias source 46 to BTR core 44 so as to create an electrostatic field that causes any negatively charged toner particles and debris on the photoconductive surface 12 of the photoconductive member 10 to move to the surface of BTR 18, where it collects behind the wiper blade. Figure 2B shows the next state, wherein the wiper blade is moved out of engagement with the BTR surface so as to permit the collected residual material 43 to be carried by the BTR toward engagement with photoconductive surface 12. When, as show in Figure 2C, the residual material 43 makes contact with photoconductive surface 12, switch 38 connects negative bias source 48 to the BTR core, thereby creating an electrostatic field that causes material 43 to move from the BTR surface to photoconductive surface 12, from which it will be removed by cleaning station B (Fig. 1).

Figure 4 shows the invention applied to a printing apparatus that employs an intermediate transfer belt 16 which receives successive single-color toner images from the photoconductive member 10 by the action of corona generator 24 at transfer station 22, thereby producing a multicolor toner image for transfer in one pass to the sheet 20 by the action of corona generator 36 (Spec. at 11, line 10 to p. 13, line 30).

Withdrawal of the blade 28 causes the collected residual material to move with belt 16 to transfer station 22, where it is transferred to the photoconductive member 10 (by reversal of the bias on the corona generator 24) for removal by the cleaning station (not shown) for the photoconductive member.

Figure 5 shows the invention applied to printing apparatus that employs an electrostatic transfer belt 14 to hold the sheet 20 against the photoconductive member 10 as the toner image is transferred from photoconductive member 10 to the sheet (Spec. at 14, lines 9-14). When blade 28, shown in the "doctor" mode, is disengaged from the belt, the residual material is carried thereby to the photoconductive member 10,

to which it is transferred (by reversal of the bias on corona generator 24) for removal by the cleaning station (not shown) for the photoconductive member.

The grouping of the claims

Claims 1-34 stand rejected as unpatentable over the same combination of references. Appellant's brief states (at 4) that the following two groups of claims should be treated as standing or falling together:

(1) Claims 1, 5-8, 12-14, 18-21, and 25-30; and

(2) Claims 2-4, 9-11, 15-18 [sic, 15-17<sup>2</sup>], 22-24, and 31-34.

The examiner objects to dividing the claims into these two groups, because he believes that insofar as the rejection is concerned, the particular type of transfer member is immaterial (Answer at 1). While we do not agree that the type of transfer member is immaterial, we note the brief does not "explain[]

s why the claims of the group are believed to be separately patentable," which is a condition for giving the groups of

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<sup>2</sup> Group (1) includes claim 18 and its dependent claims 19-21.

claims separate consideration. 37 CFR § 1.192(c)(7).

Instead, the brief merely asserts that whereas the claims of the first group are broad enough to read on a transfer member in the form of an intermediate transfer member, the claims of the second group are directed to transfer members in the form of bias transfer rolls and transport belts. "Merely pointing out differences in what the claims cover is not an argument as to why the claims are separately patentable." Id.

Consequently, all of the appealed claims will be treated as standing or falling with claim 14, the broadest claim, which reads as follows.

14. A transfer apparatus in which residual material on a transfer member is removed to a photoconductive member, comprising:

a blade, movable between a first position, contacting the transfer member, and a second position, spaced from the transfer member, said blade accumulating residual material in the first position; and

a biasing device associated with the transfer member, for selectively applying to the transfer member a bias of a first polarity or a bias of a second polarity, opposite to the first polarity, said blade being in the first position in response to said biasing device applying the bias of the first polarity, and the biasing device applying the bias of the second polarity in response to the blade being in the second position as to attract the accumulated residual material to the photoconductive member.

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The merits of the rejection

The examiner relies on the following references:

Davidge et al. (Davidge) 24, 1972	3,700,328	Oct.
Bisaiji et al. (Bisaiji) 14, 1993	5,270,783	Dec.

Claims 1-34 stand rejected under 35 U.S.C. § 103 as unpatentable over Bisaiji taken with Davidge.

The examiner relies on the Bisaiji patent for its disclosure of an electrostatic printing apparatus having a belt cleaning unit 22 (Fig. 2), including a movable rubber blade 22b, for cleaning the intermediate transfer belt 19 (col. 6, lines 63-67). After the Bk image, or first image, has been transferred to the belt 19, the belt cleaning unit 22 is spaced apart from the belt 19 by the mechanism 22c while the belt transfer of the second, third and fourth colors are under way (col. 6, line 67 to col. 7, line 5).

The examiner notes that Bisaiji fails to explain what happens to the residual material that is collected by the belt cleaning unit 22 and assumes (Answer at 4), without contradiction by appellant, that the material is retained in

the housing of the cleaning unit until it is manually emptied.

Figure 1 of Davidge shows an electrostatic printing apparatus which permits toner that has been collected by cleaning station 3 for the photoconductor on drum 7 to be automatically returned to the developer unit (1). This is accomplished by using the relay 14 to alter the potentials applied to various system components. During operation in the development mode, when the relay is in a first state, the photoconductor on drum 7 is initially negatively charged by corona wires 15 (col. 4, lines 7-9). The toner particles in developer unit 4, which are triboelectrically positively charged, are deposited by brush 2 on the areas of the photoconductor that have not been fully discharged (col. 4, lines 20-24). The resulting toner image is transferred to paper 9 with the aid of an electrostatic field produced by the application of a negative voltage to transfer corona wire 22 (col. 4, lines 24-27). After the photoconductor is discharged by fluorescent erase lamp 23, any remaining toner particles are removed by cleaning station 3, which contains a carrier that causes the toner particles to be triboelectrically



charged negative and has a positive electrical bias applied thereto in order to attract the negatively charged toner particles (col. 4, lines 27-37). During the recirculation mode, when the relay is in the second state, erase lamp 23 is turned off and the photoconductor on drum 7 is charged positively by corona wire 22 (col. 4, lines 37-42). A negative bias is then applied to cleaner unit 3, causing the negatively charged toner particles to be deposited on the photoconductor on drum 7, which carried them to developer unit 1, which is biased sufficiently negative to attract them (col. 4, lines 43-58). Although Davidge's disclosed apparatus includes a transfer station 11 having two (unnumbered) rollers, Davidge does not suggest collecting residual toner at that station, let alone recirculating residual toner collected at that station.

The examiner, characterizing Davidge as teaching "the basic concept of transferring the removed toner particles from one location to another at the appropriate time in the copy cycle" (Answer at 3-4), argues that Davidge would have been understood as suggesting a way to avoid having to manually

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empty the collected residual toner from Bisaiji's belt  
cleaning unit 22:

Instead of the removed residual toner being dumped into a container 22, where it must be manually removed, it would appear as an obvious expedient to the ordinary routineer to apply the proper bias to blade 22b, transfer member 19 and drum 9 in order that the residual toner initially cleaned from the transfer member be reattached to the transfer member and subsequently transported to a single cleaning station 10 by the photoconductive member 9. Whether the transfer member is an intermediate member, such as belt, or a direct transfer member, such as a roll, is considered to be of no patentable significance since the basic teaching of Davidge, et al. would be applicable in either case. [Answer at 4.]

We agree with appellant (Brief at 7) that in combining the teachings of Davidge with Bisaiji in the foregoing manner, the examiner is relying to an unacceptable extent on hindsight gained from appellant's own disclosure. Compare In re McLaughlin, 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971) ("Any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from

applicant's disclosure, such a reconstruction is proper." ).  
Davidge does not disclose using his recirculation technique to move residual toner from a transfer member to a photoconductive member, as required by the claim. Instead, Davidge's disclosed recirculation technique is limited to recirculating the residual toner between two stations associated with the photoconductor on drum 7, which corresponds to the claimed photoconductive member. Nor does Davidge disclose a recirculation technique which relies on engagement of a cleaning blade with a moving member to accumulate residual toner and on subsequent disengagement of the cleaning blade from the moving member to permit the accumulated residual toner to be carried to a different location. For these reasons, we are of the view that Bisaiji and Davidge considered together fail to suggest the invention recited in claim 14. Accordingly, the § 103 rejection of claim 14 over Bisaiji taken with Davidge is reversed, as is the rejection of claims 2-34, which stand or fall (in this case stand) therewith.

REVERSED

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ERROL A. KRASS	)	
Administrative Patent Judge	)	)
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	)	BOARD OF PATENT
JOHN C. MARTIN	)	
Administrative Patent Judge	)	APPEALS AND
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	)	INTERFERENCES
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RICHARD TORCZON	)	
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